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(54) **THERMAL PROCESSES FOR SUBSURFACE FORMATIONS**

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See application file for complete search history.

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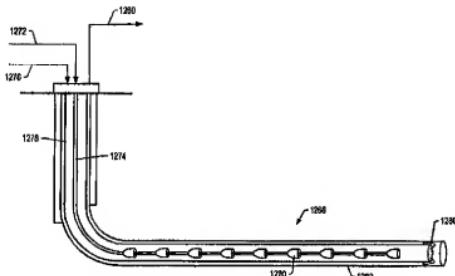
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Primary Examiner—George Suchfield(57) **ABSTRACT**

A process may include providing heat from one or more heaters to at least a portion of a subsurface formation. Heat may transfer from one or more heaters to a part of a formation. In some embodiments, heat from the one or more heat sources may pyrolyze at least some hydrocarbons in a part of a subsurface formation. Hydrocarbons and/or other products may be produced from a subsurface formation. Certain embodiments describe apparatus, methods, and/or processes used in treating a subsurface or hydrocarbon containing formation.

63 Claims, 158 Drawing Sheets



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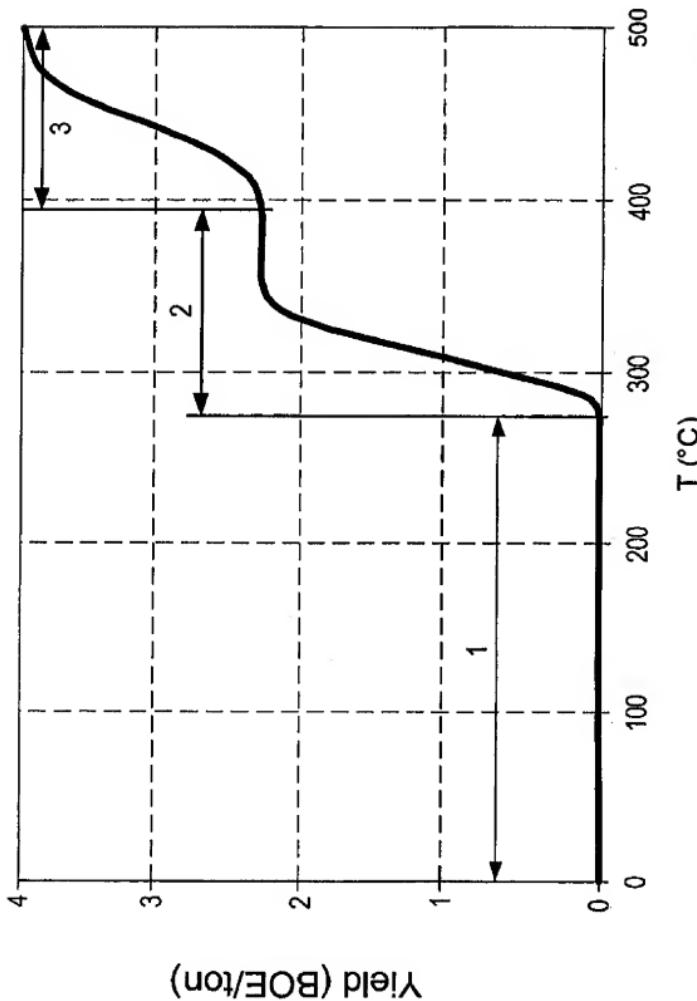
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FIG. 1



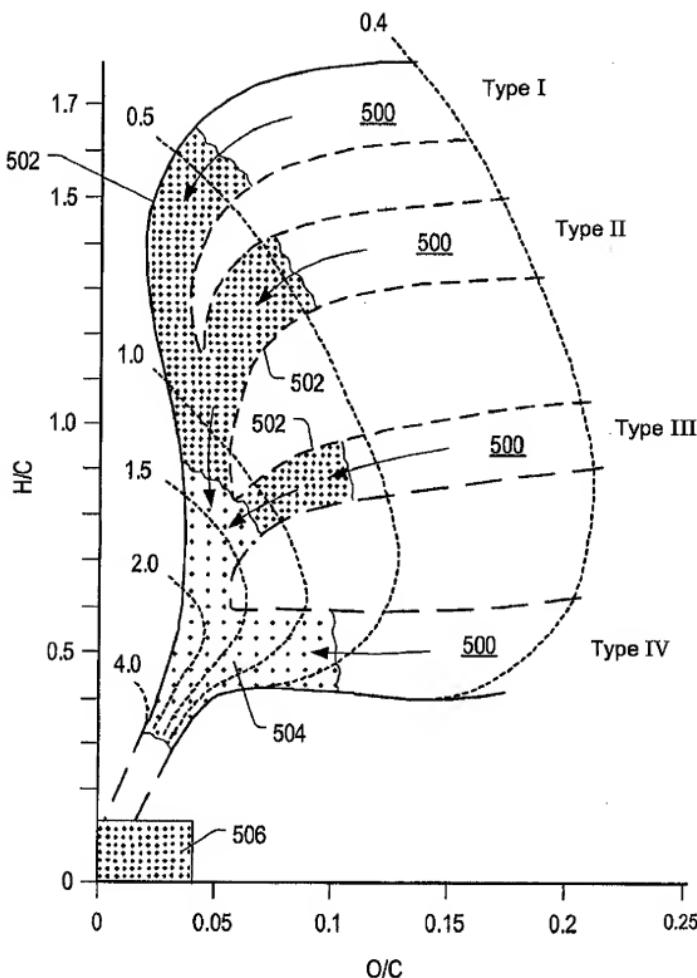
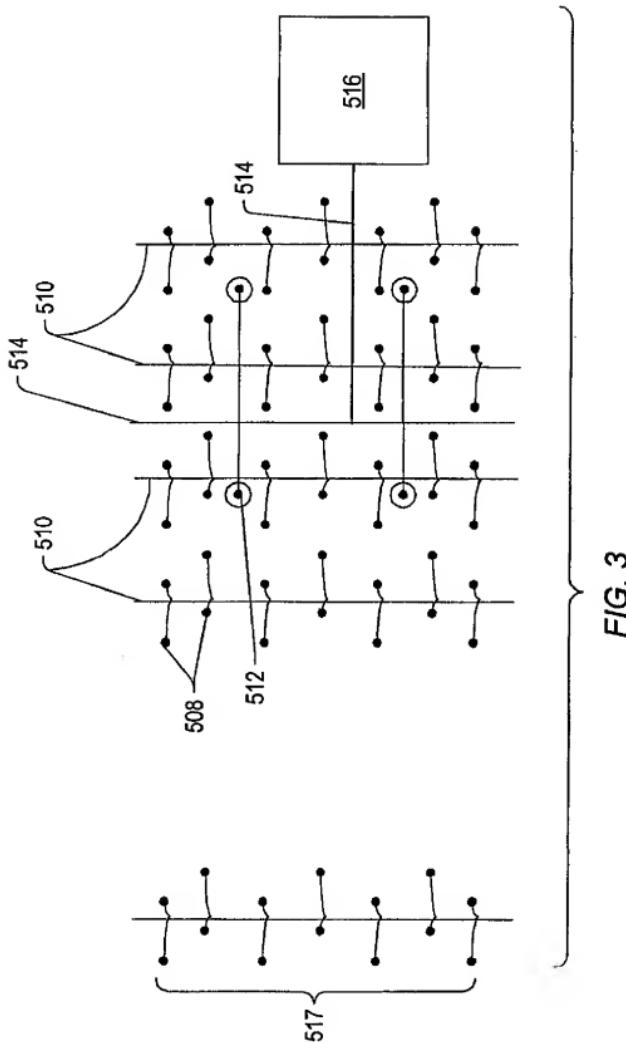


FIG. 2



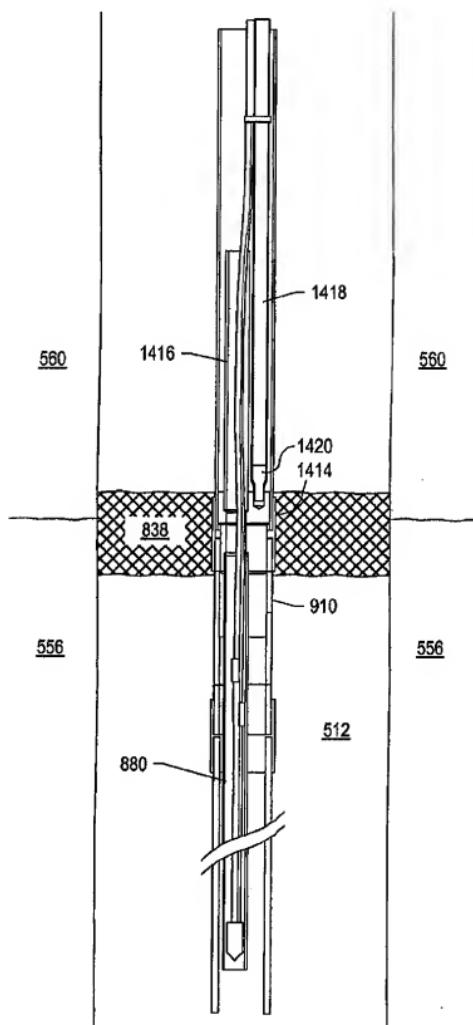


FIG. 4

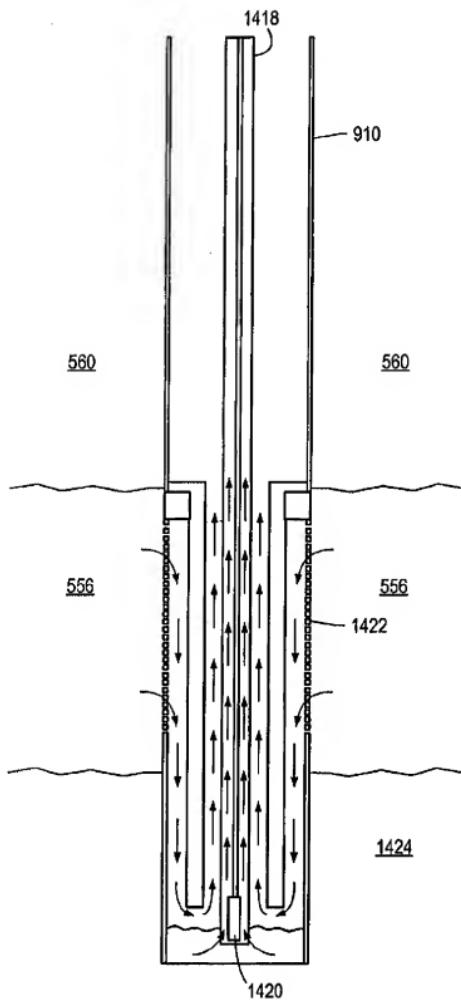


FIG. 5

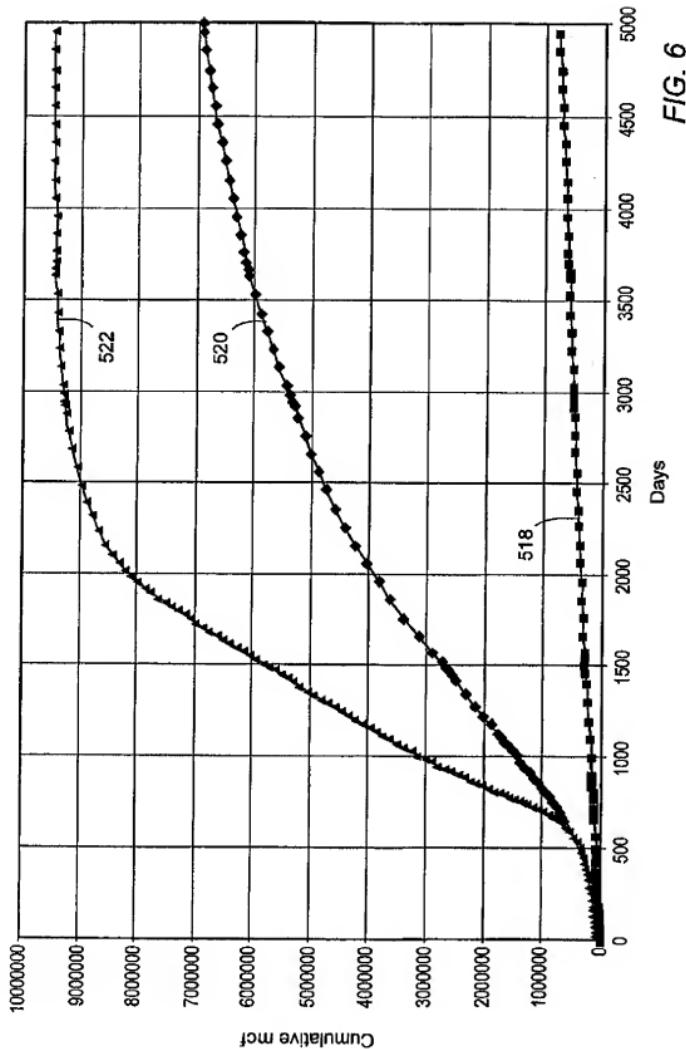


FIG. 6

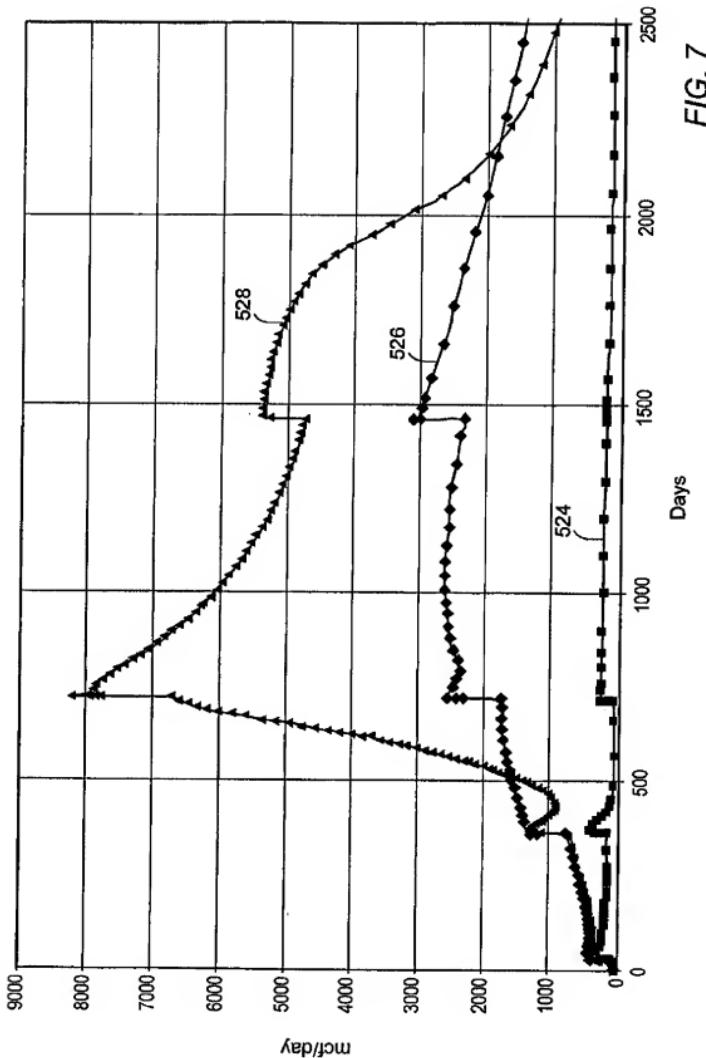


FIG. 7

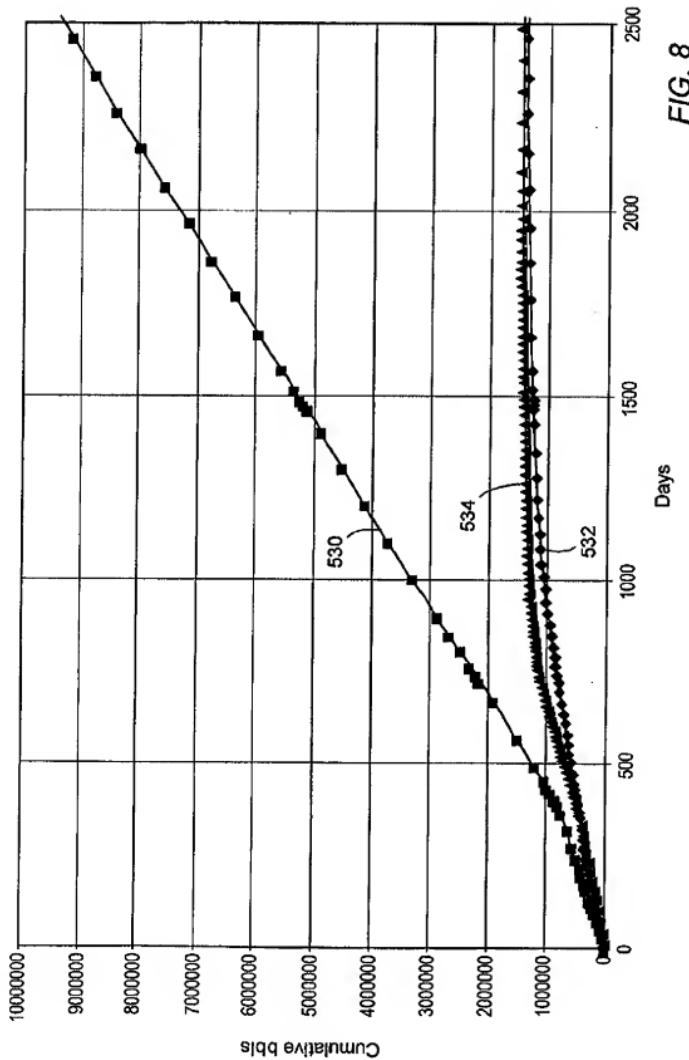


FIG. 8

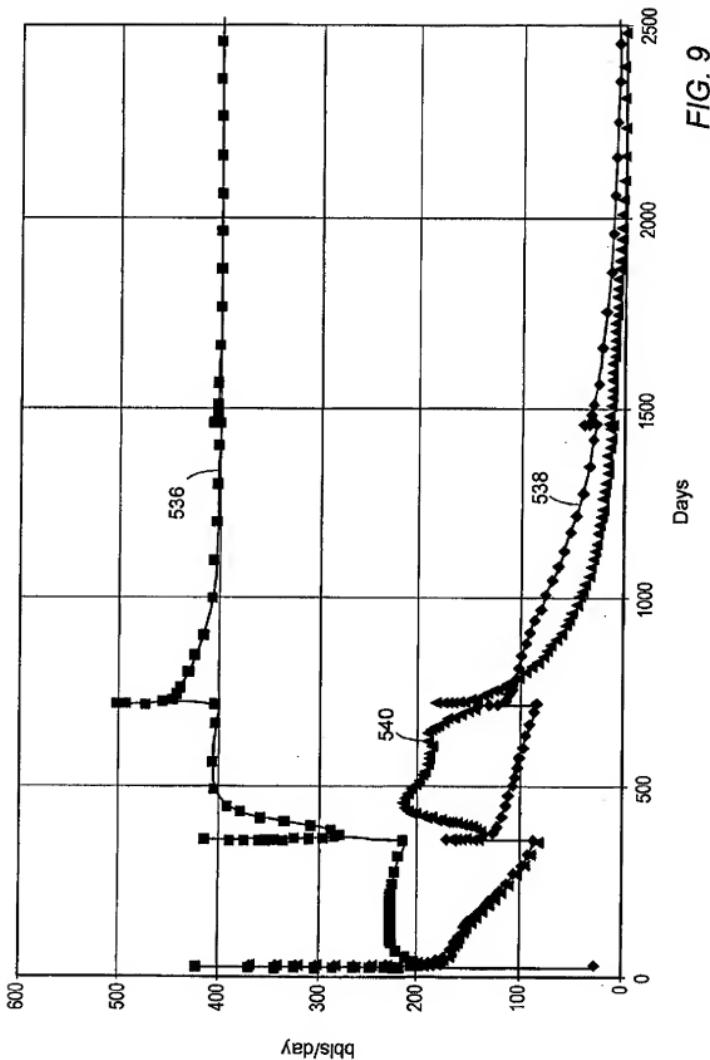


FIG. 9

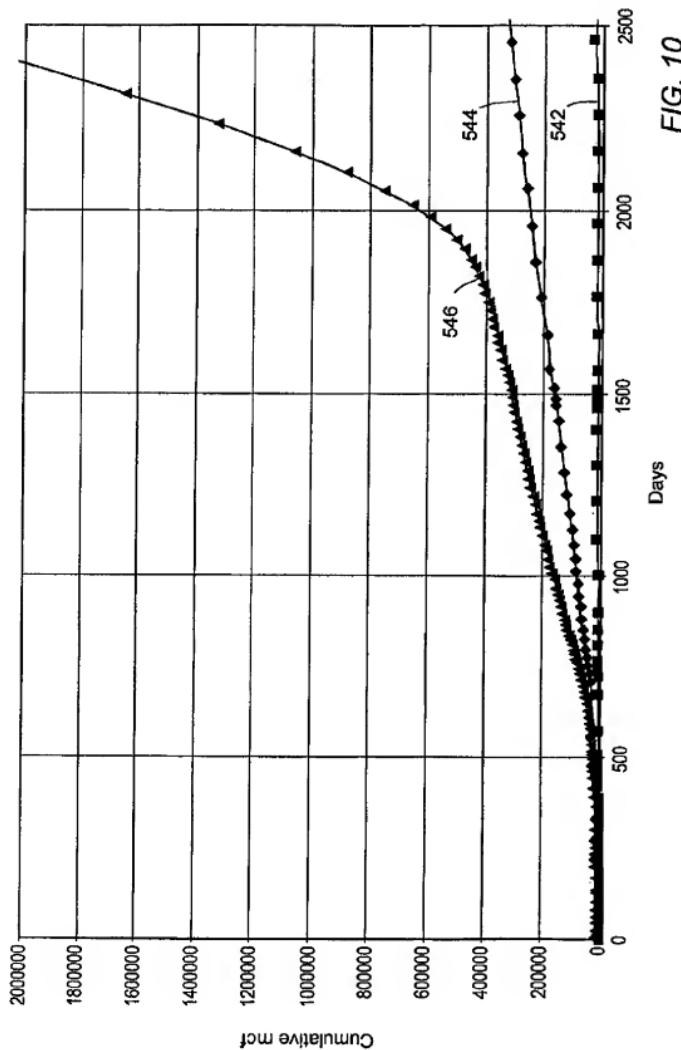
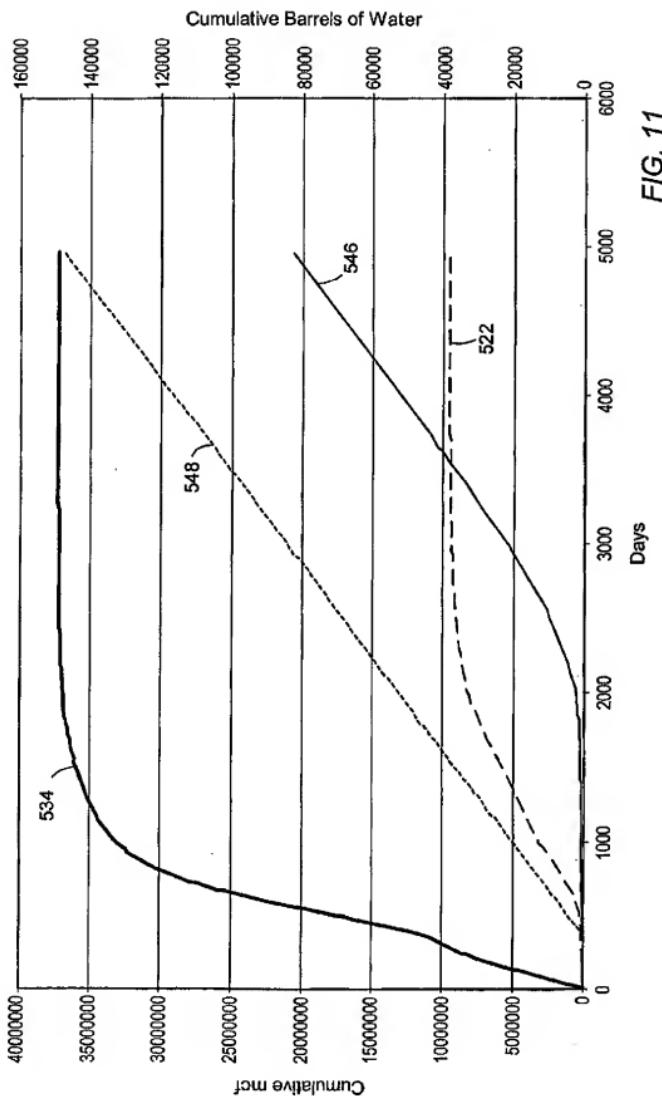


FIG. 10



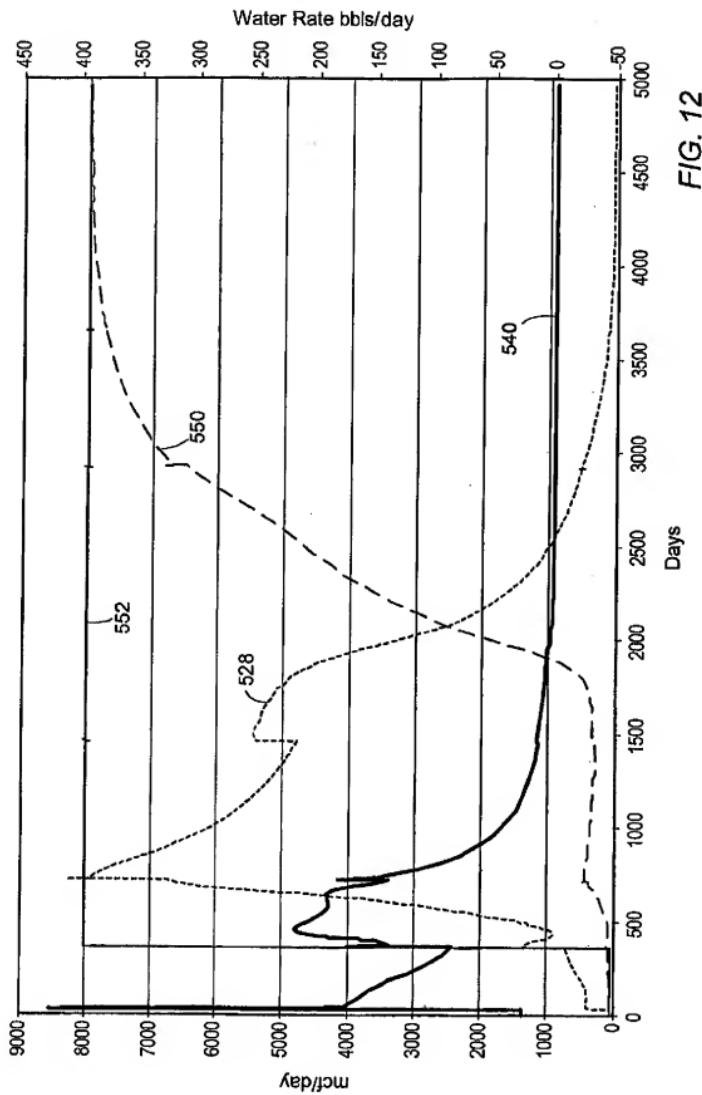


FIG. 12

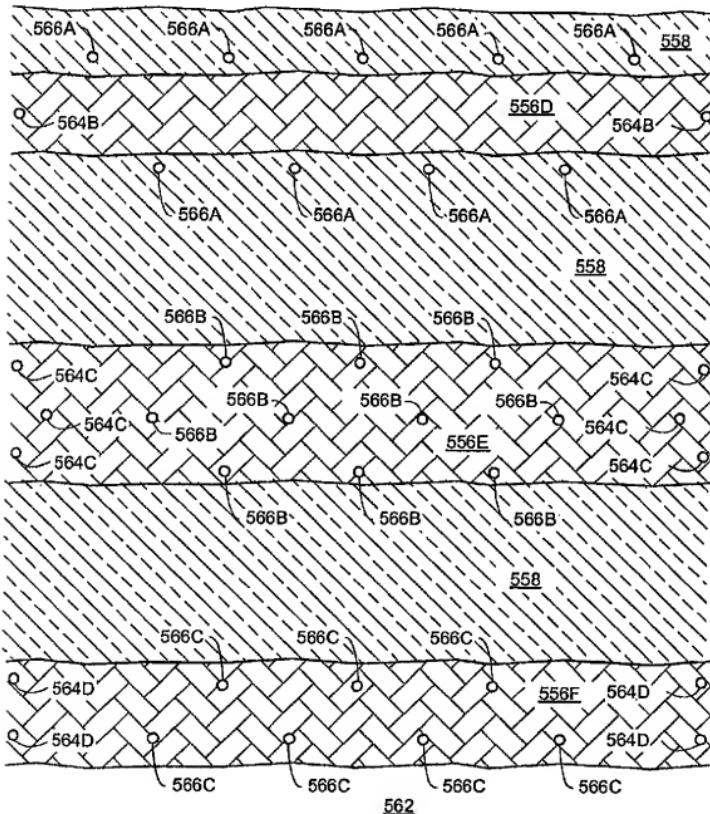
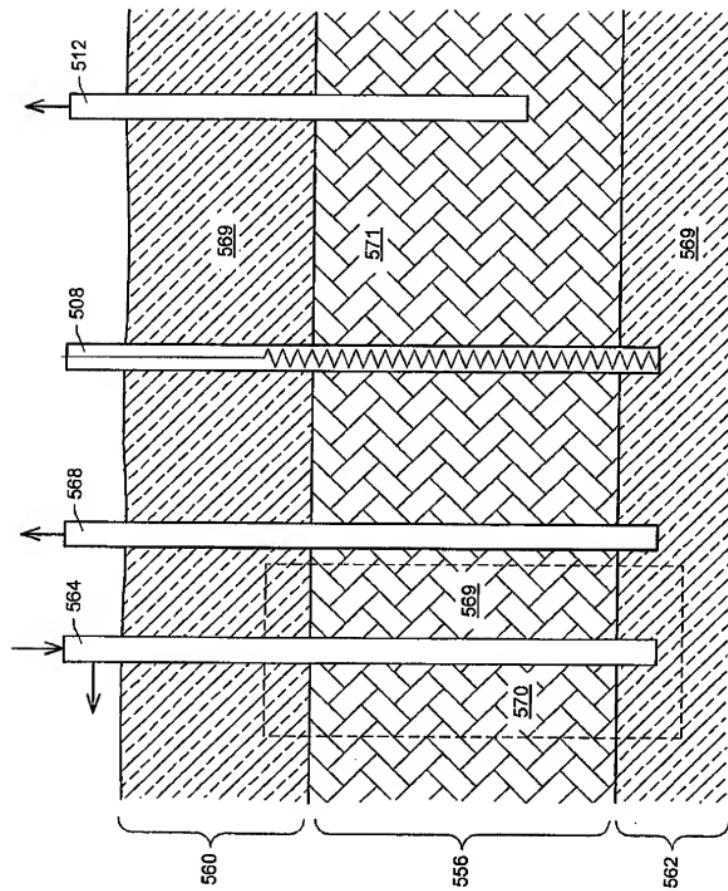
554560

FIG. 13

FIG. 14



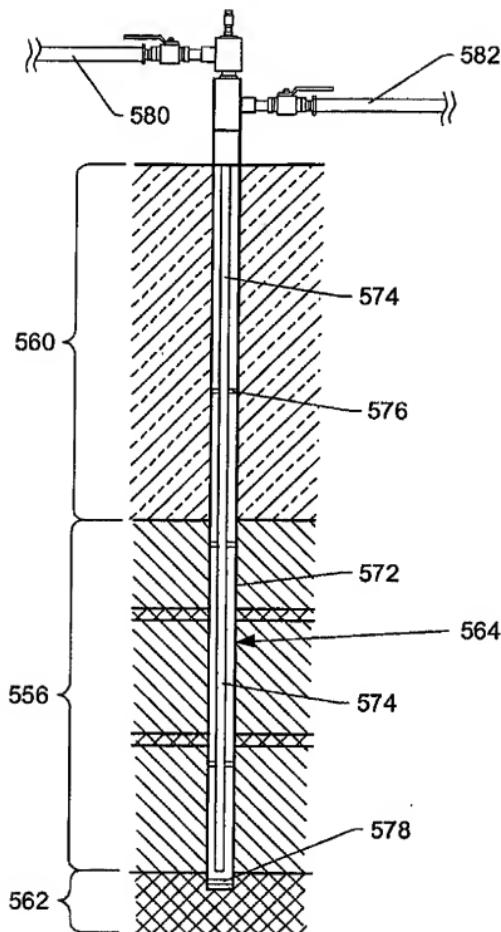


FIG. 15

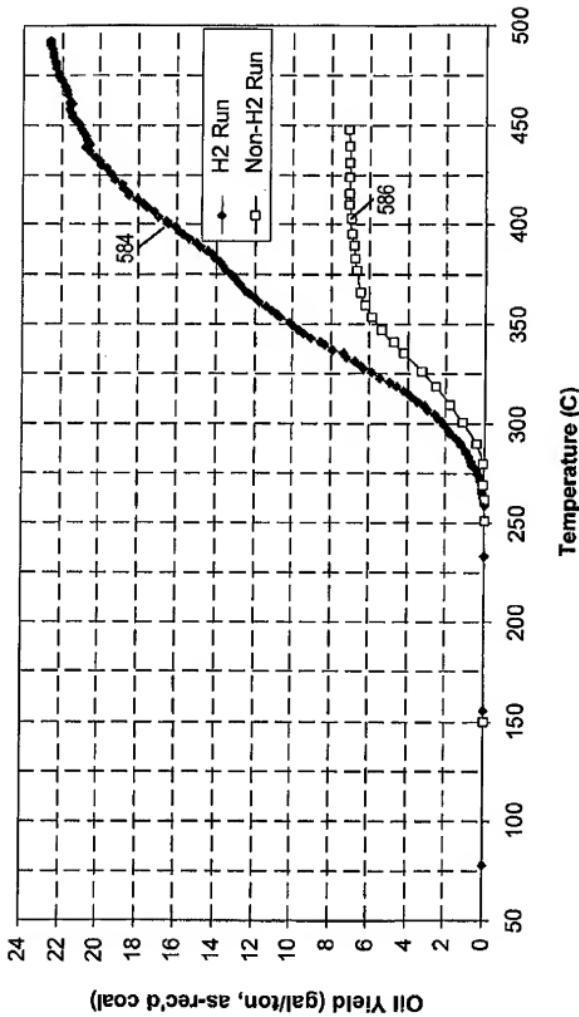


FIG. 16

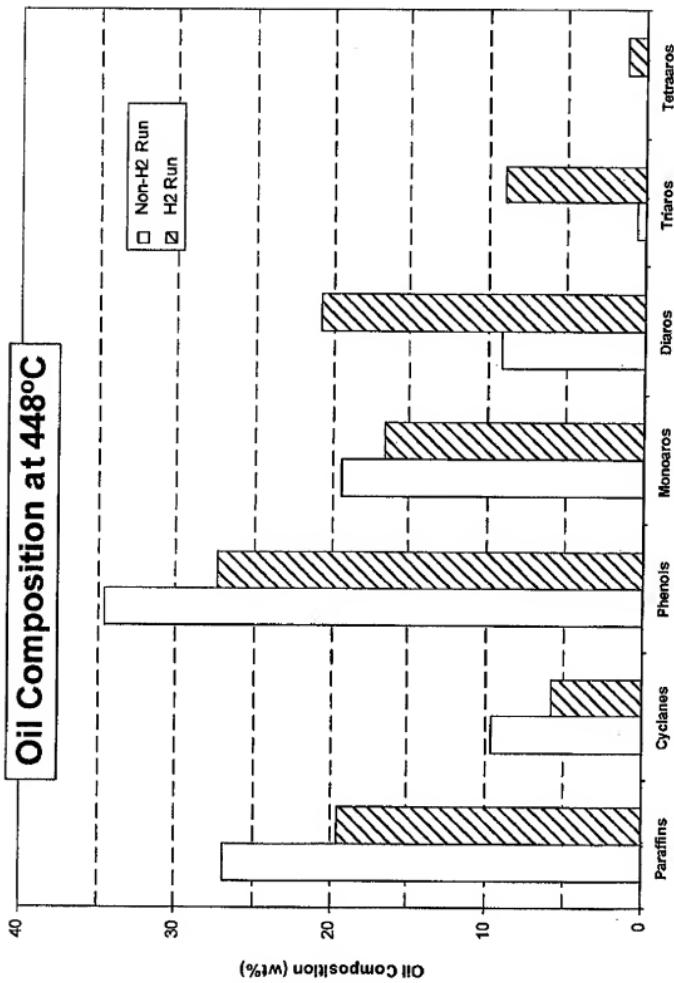


FIG. 17

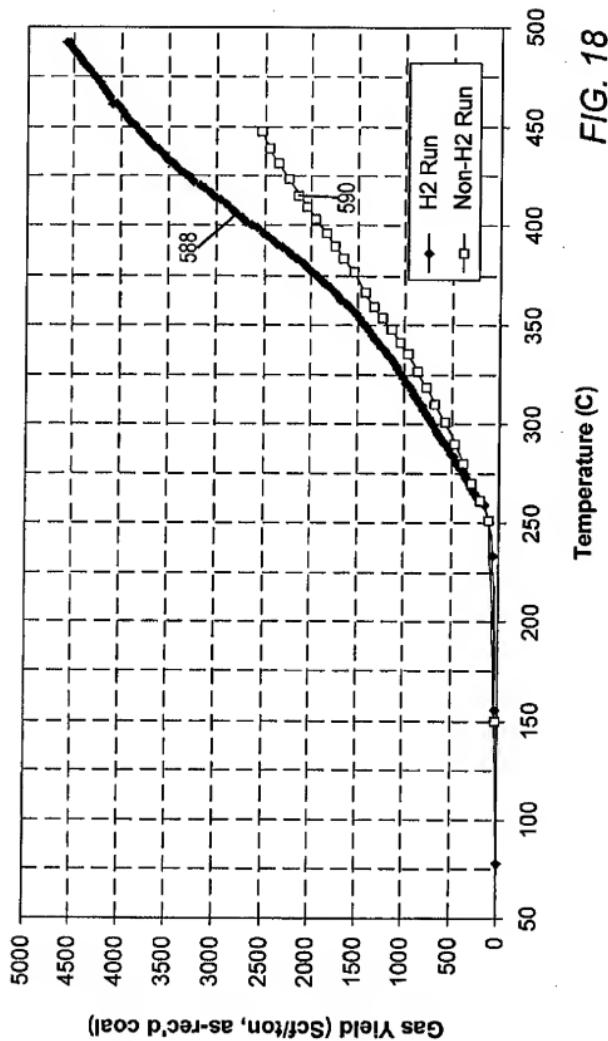
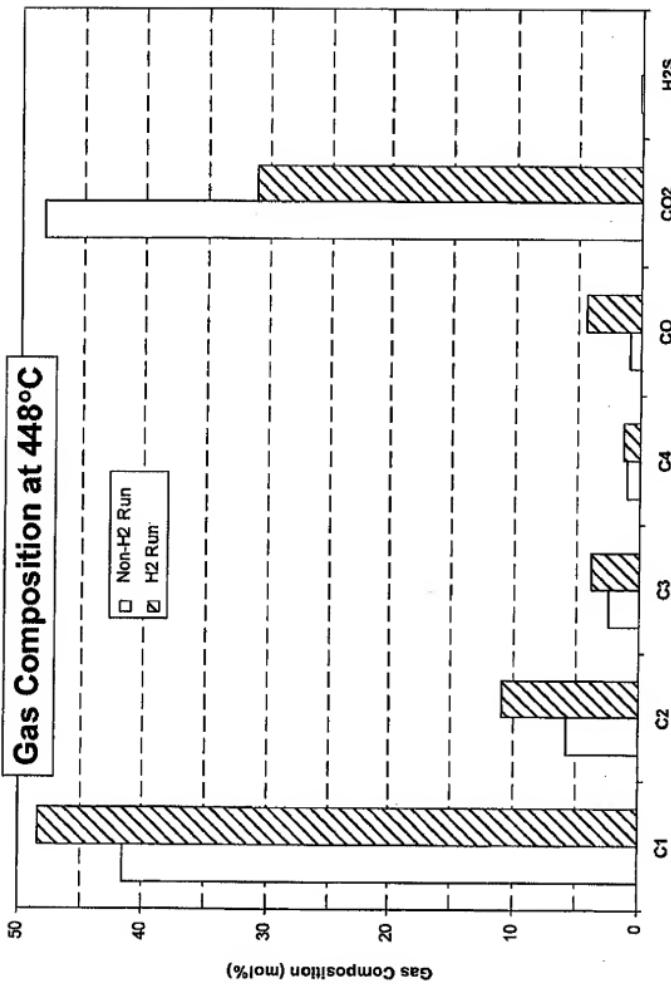


FIG. 18

FIG. 19



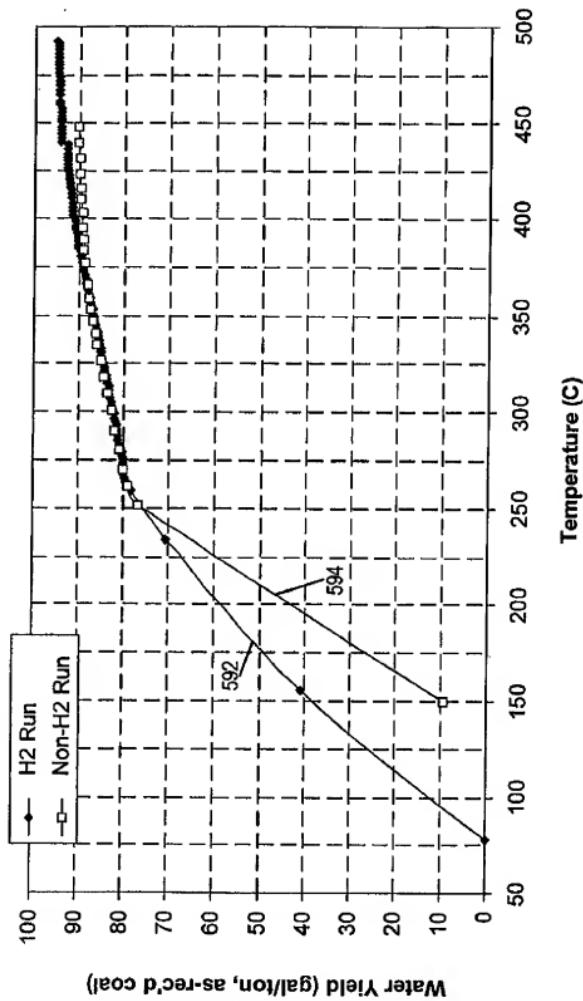


FIG. 20

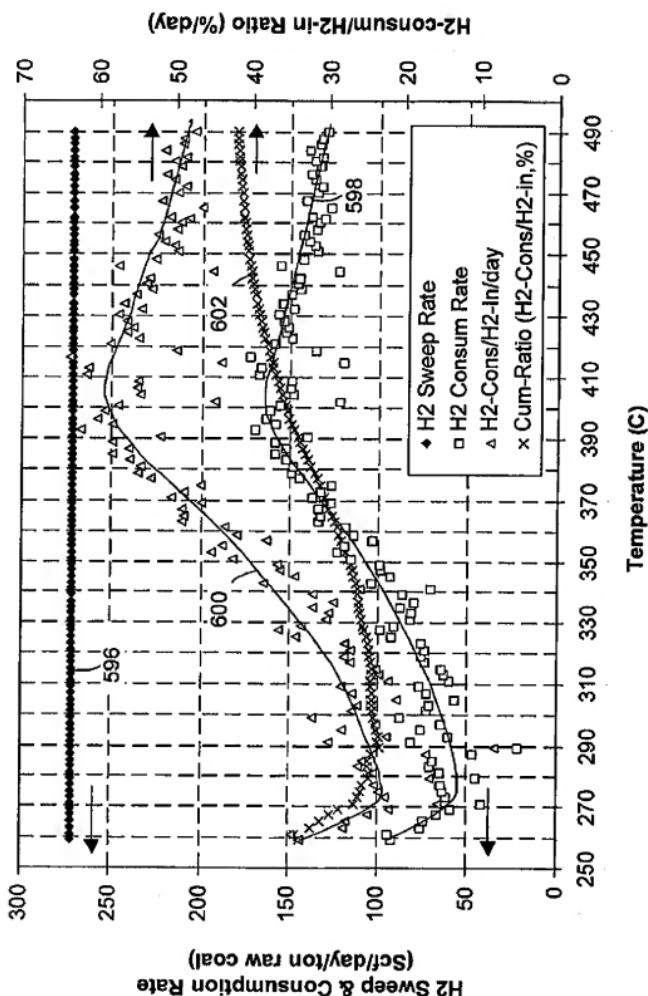


FIG. 21

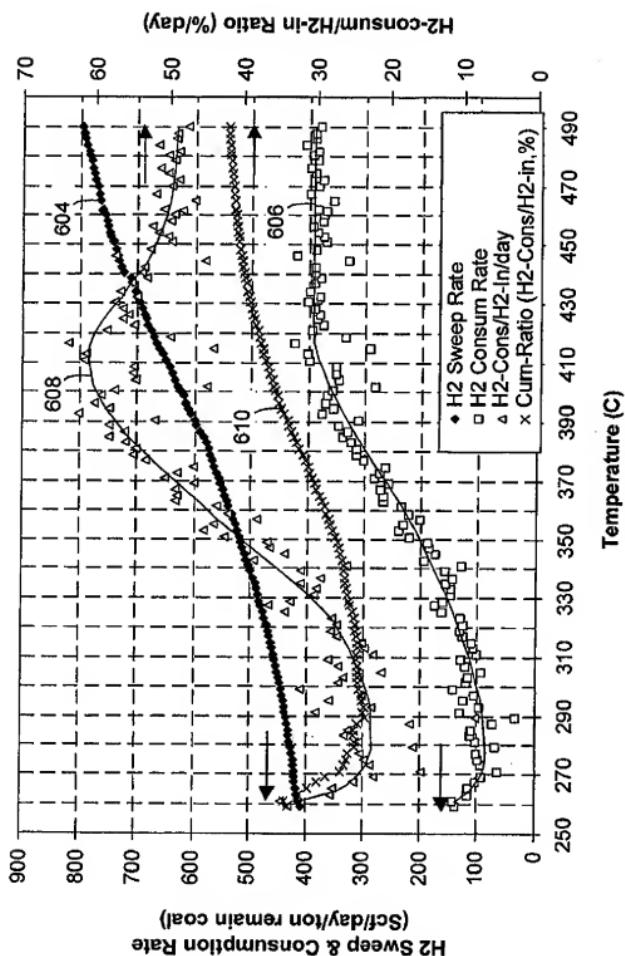


FIG. 22

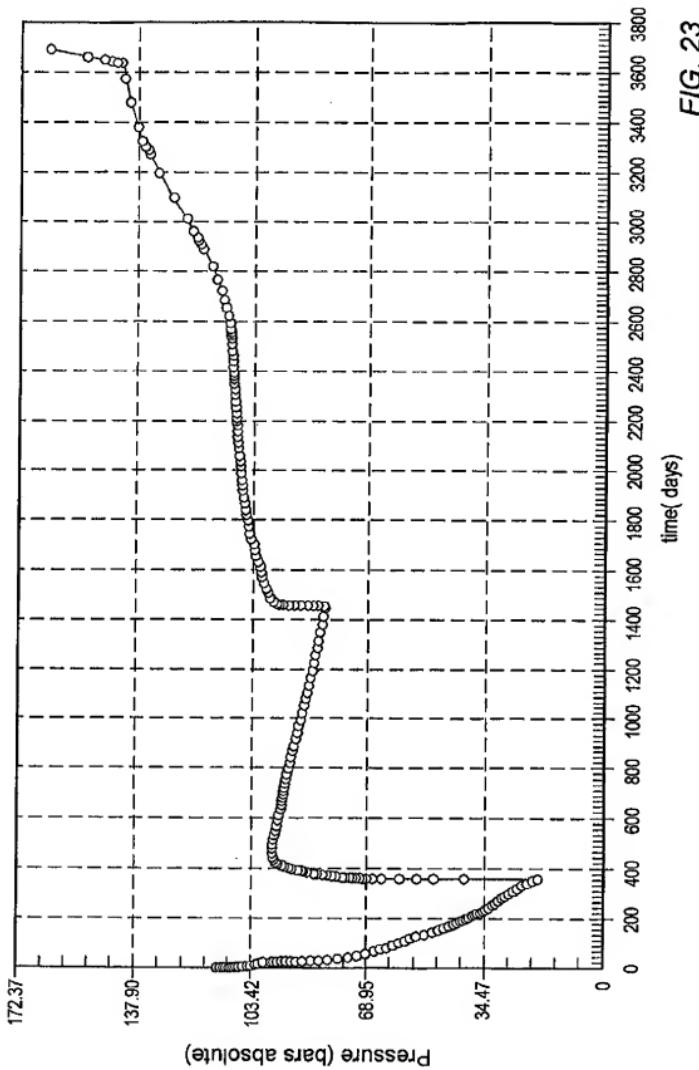


FIG. 23

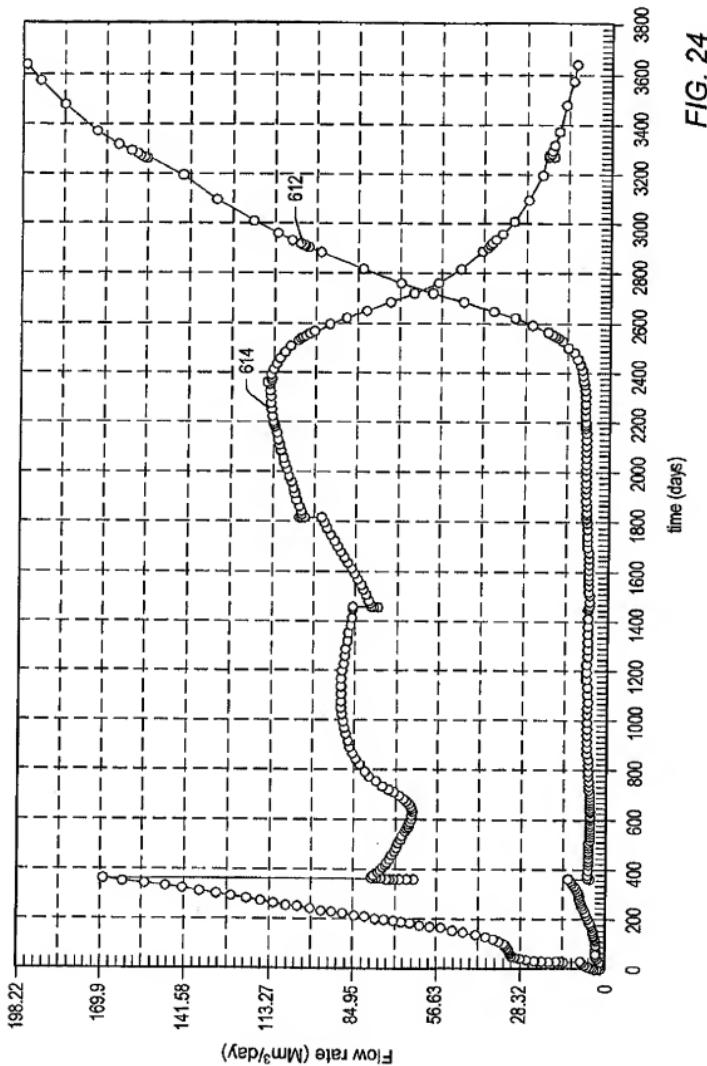


FIG. 24

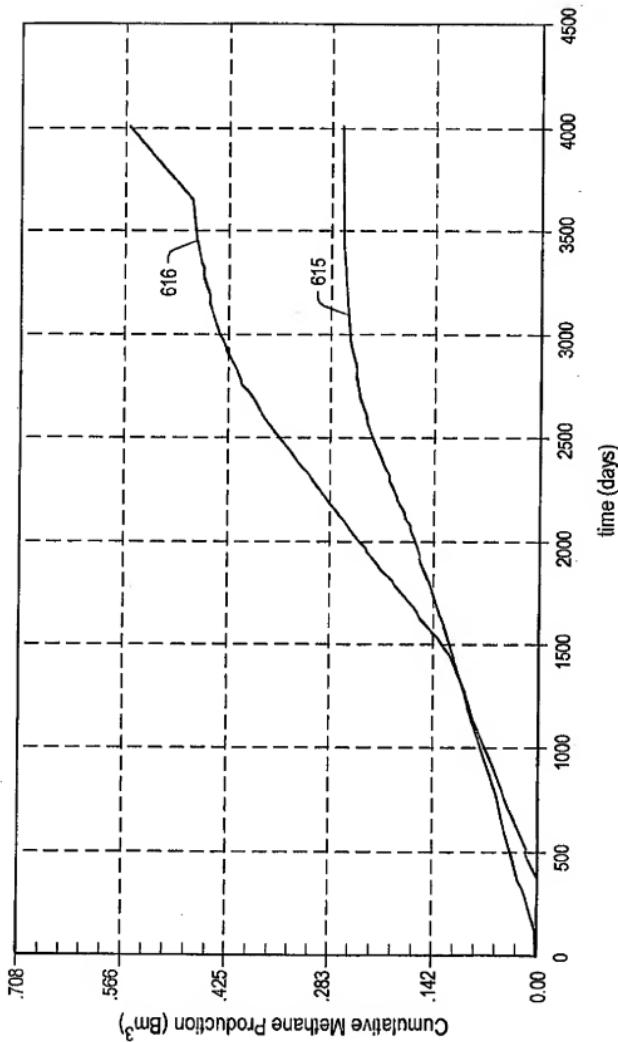


FIG. 25

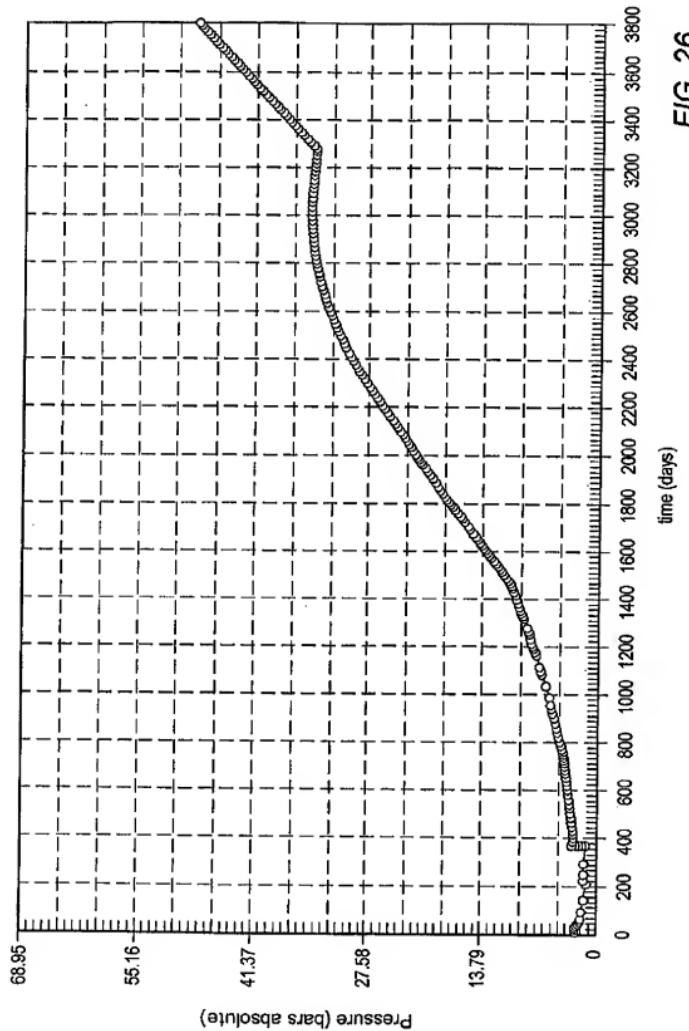


FIG. 26

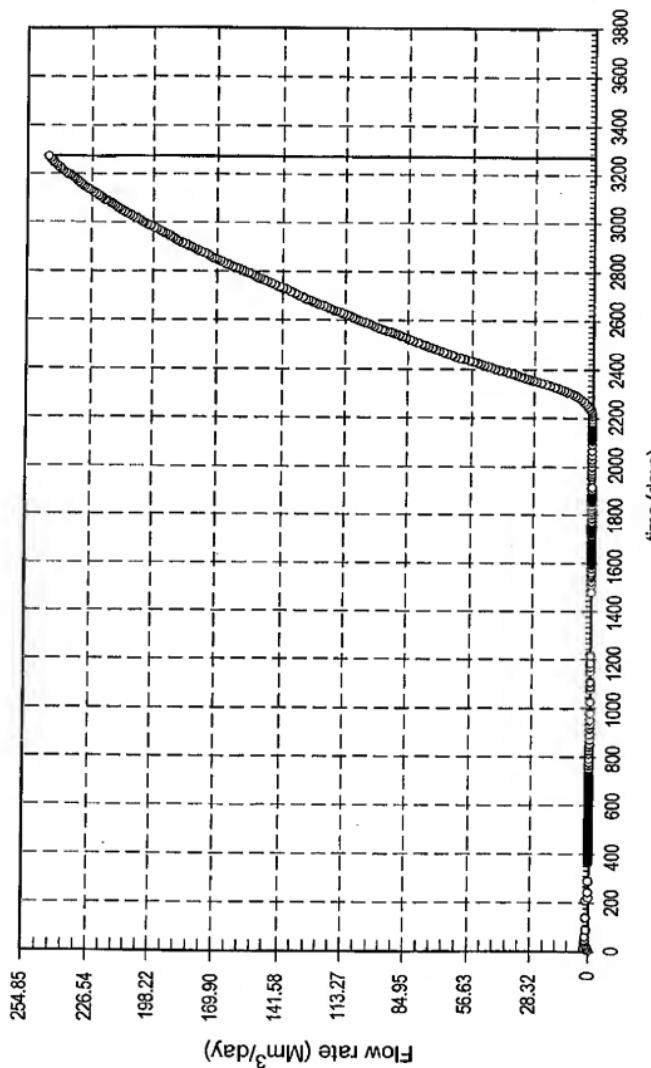


FIG. 27

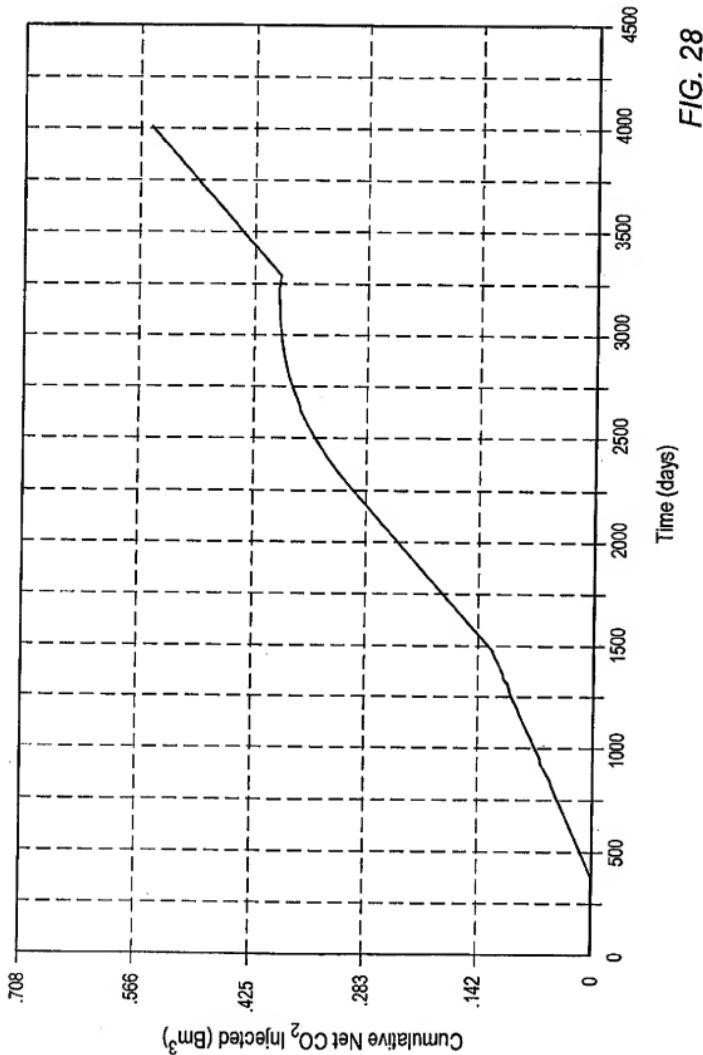


FIG. 28

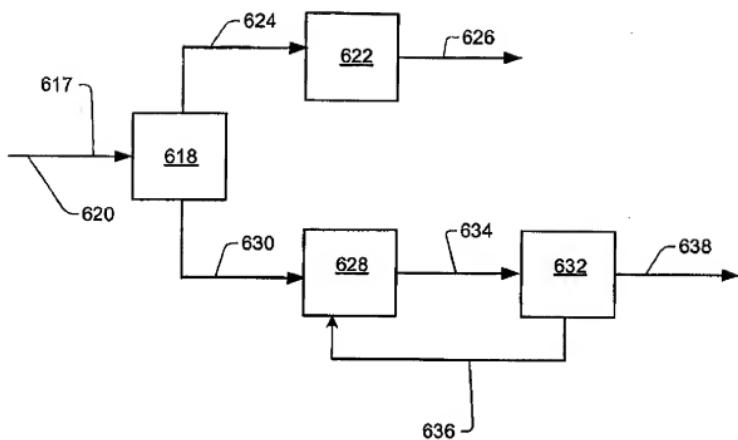
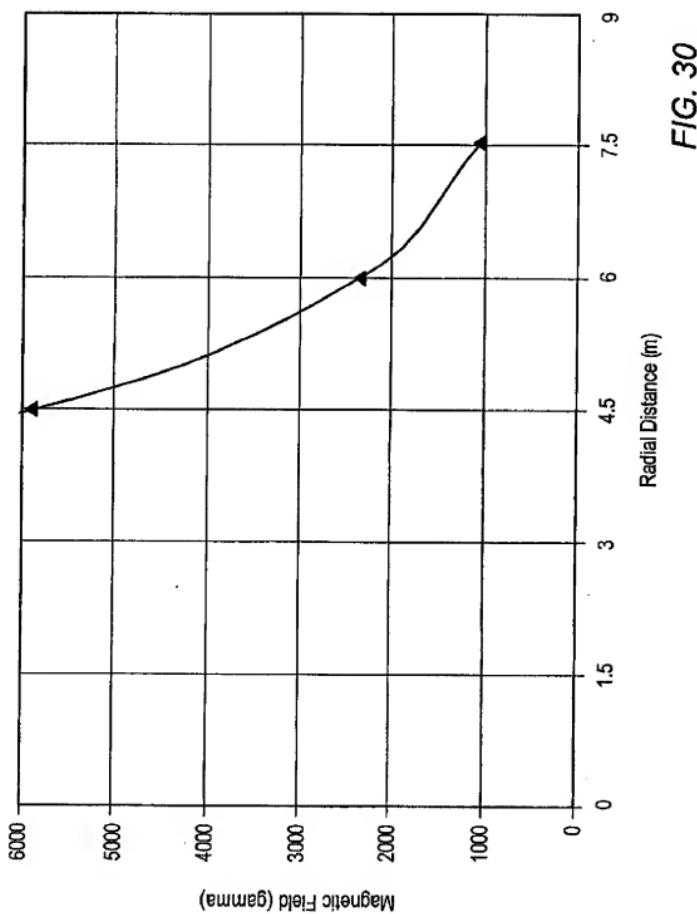


FIG. 29



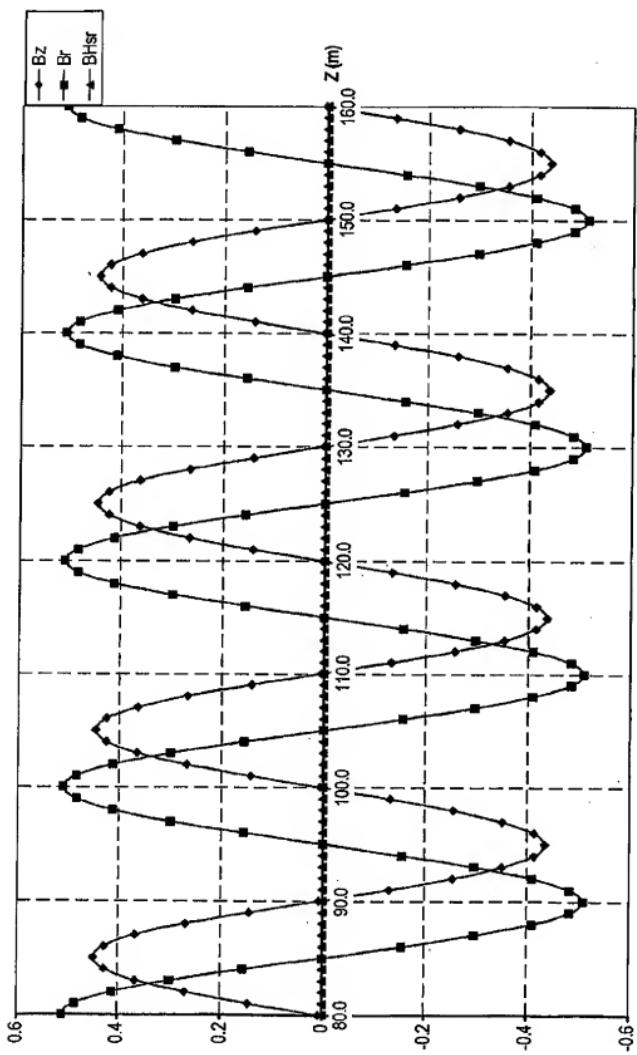


FIG. 31

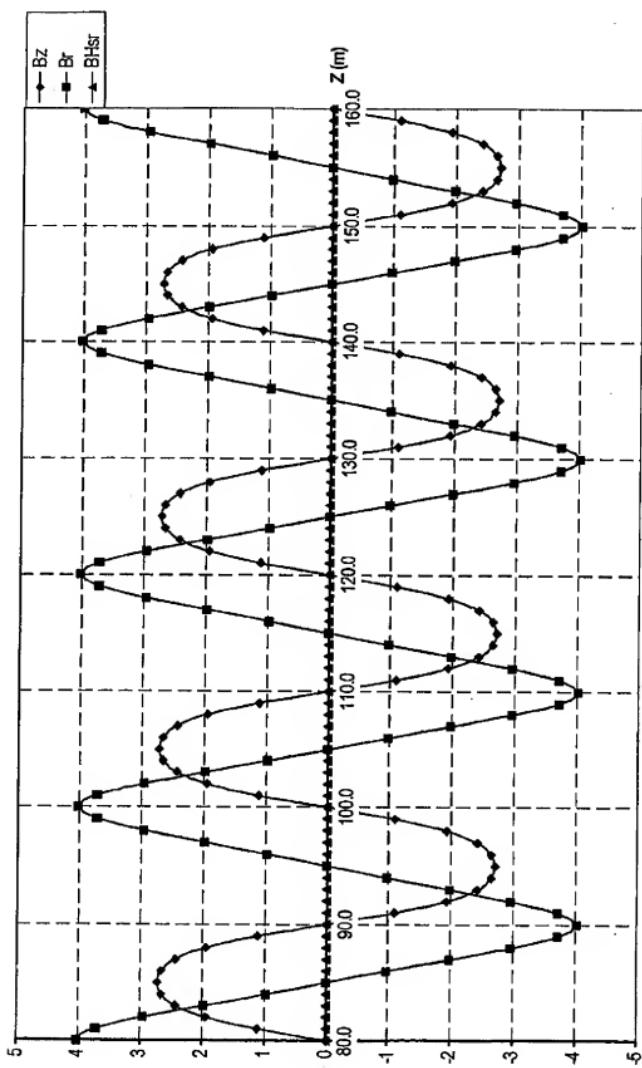


FIG. 32

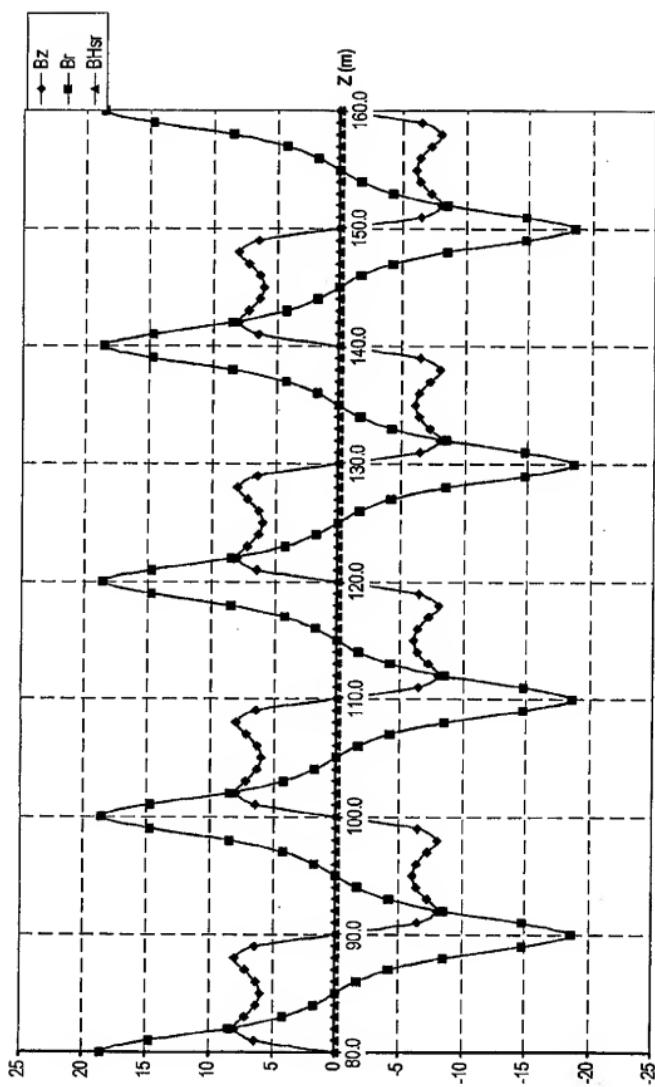


FIG. 33

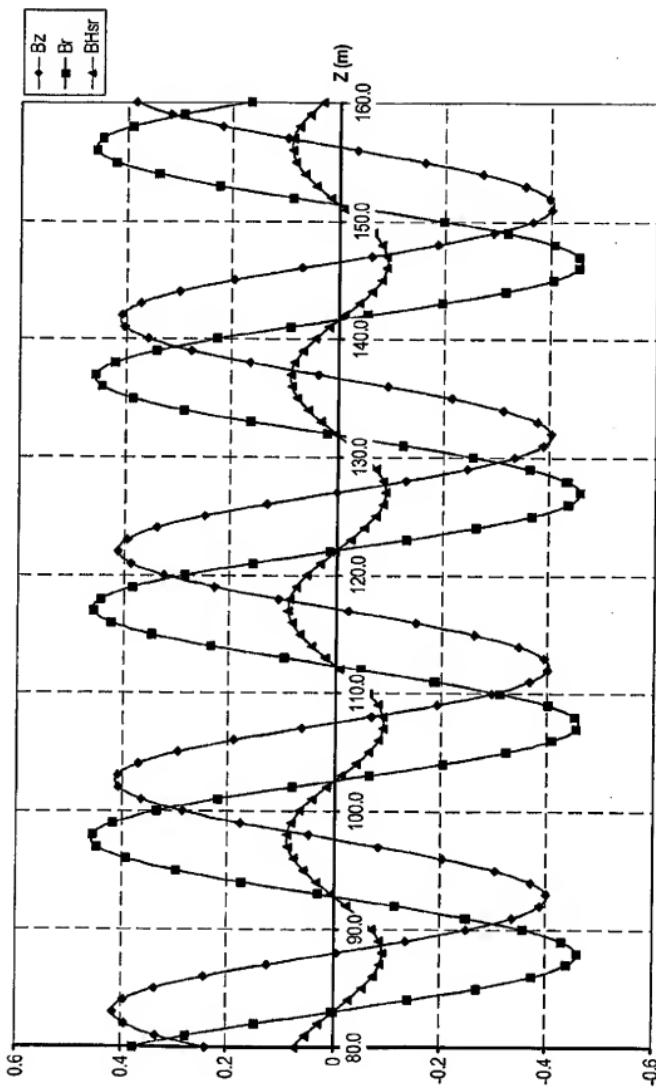


FIG. 34

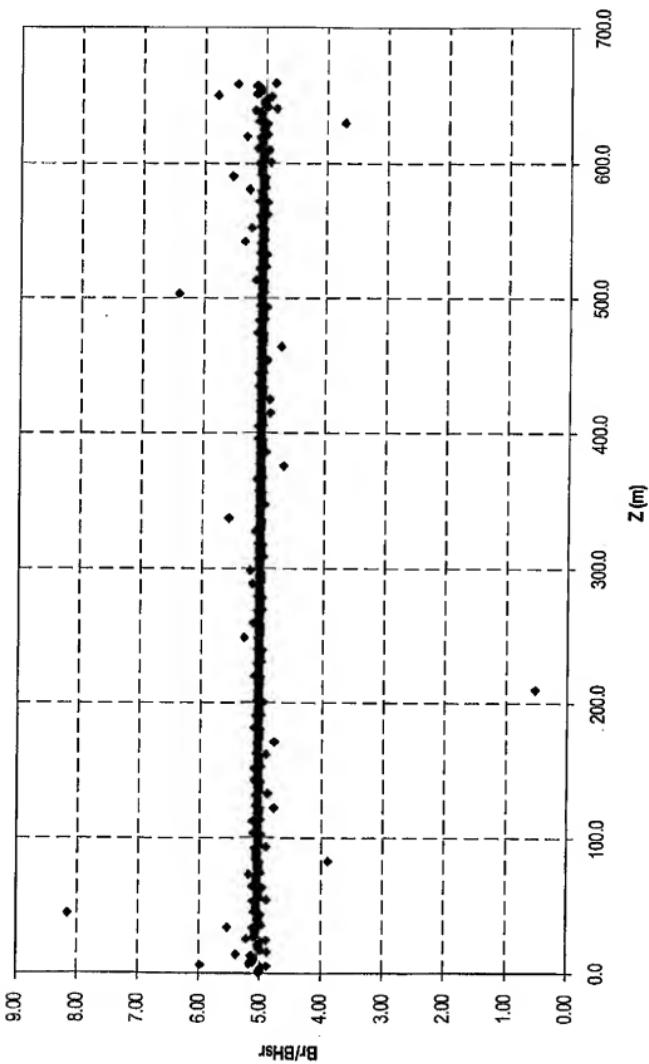


FIG. 35

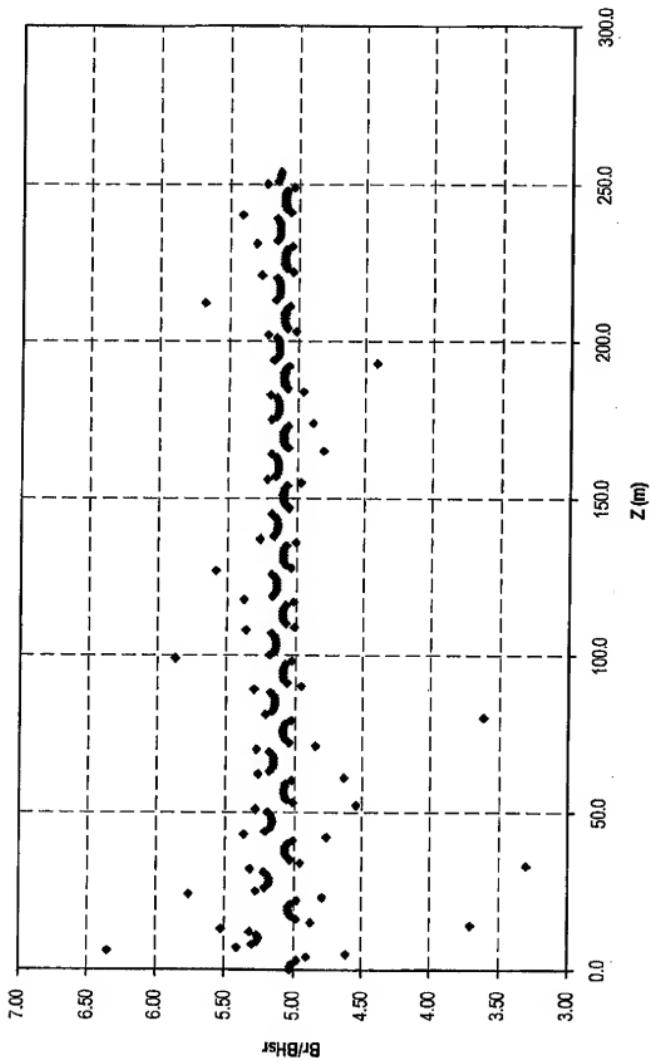


FIG. 36

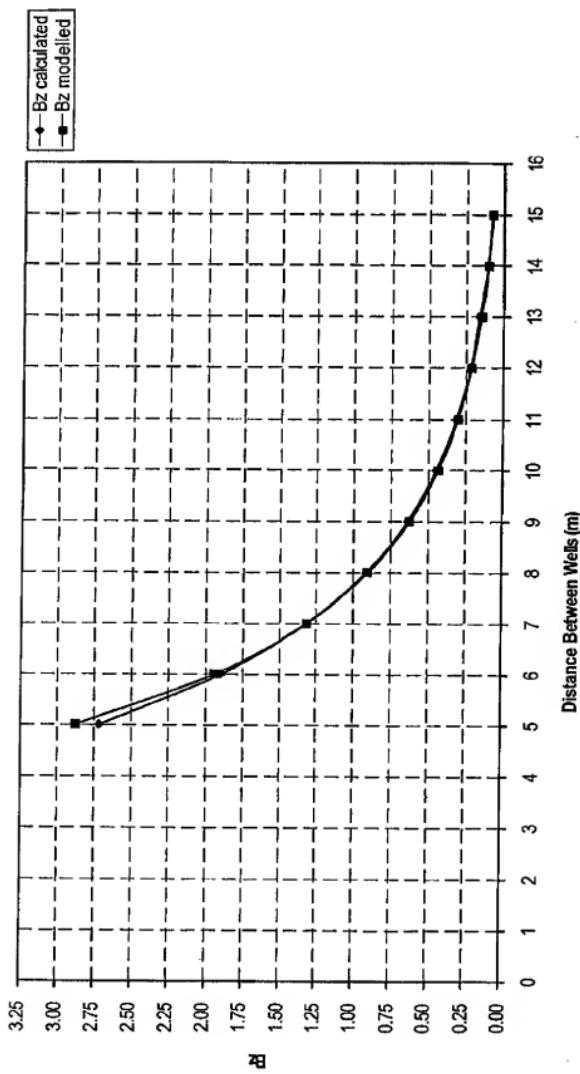


FIG. 37

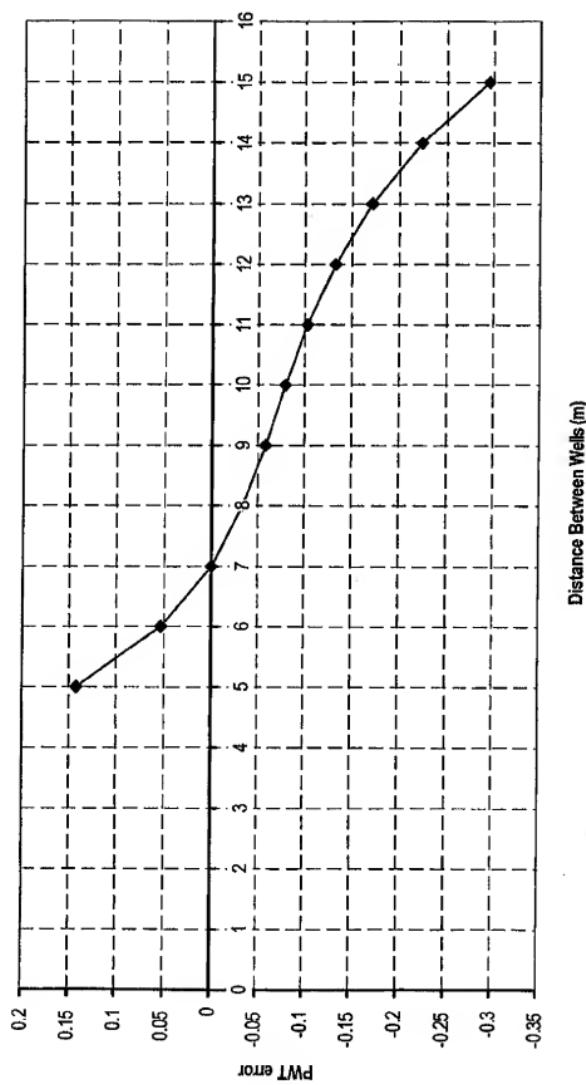


FIG. 38

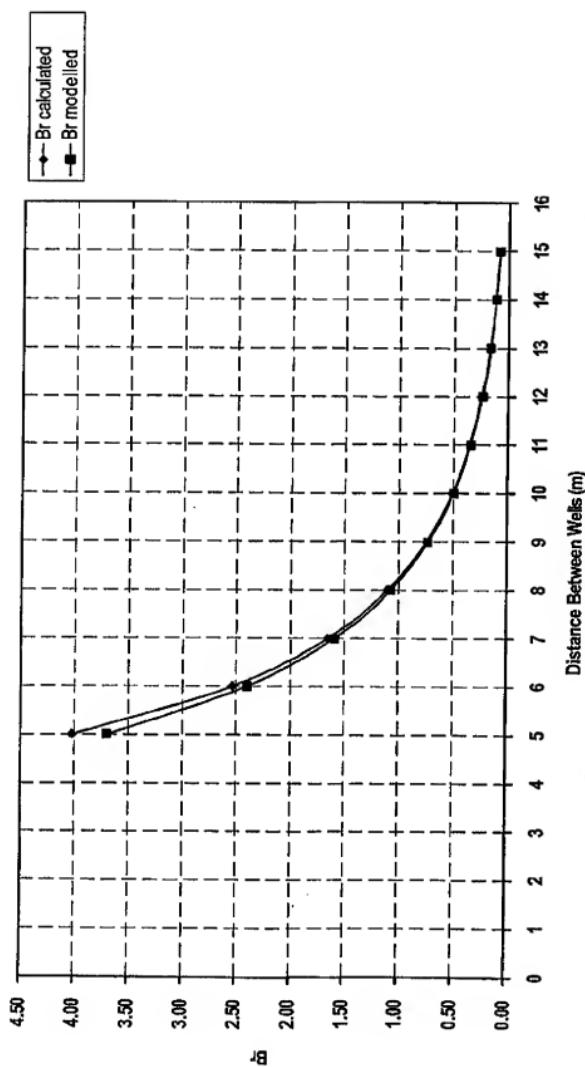


FIG. 39

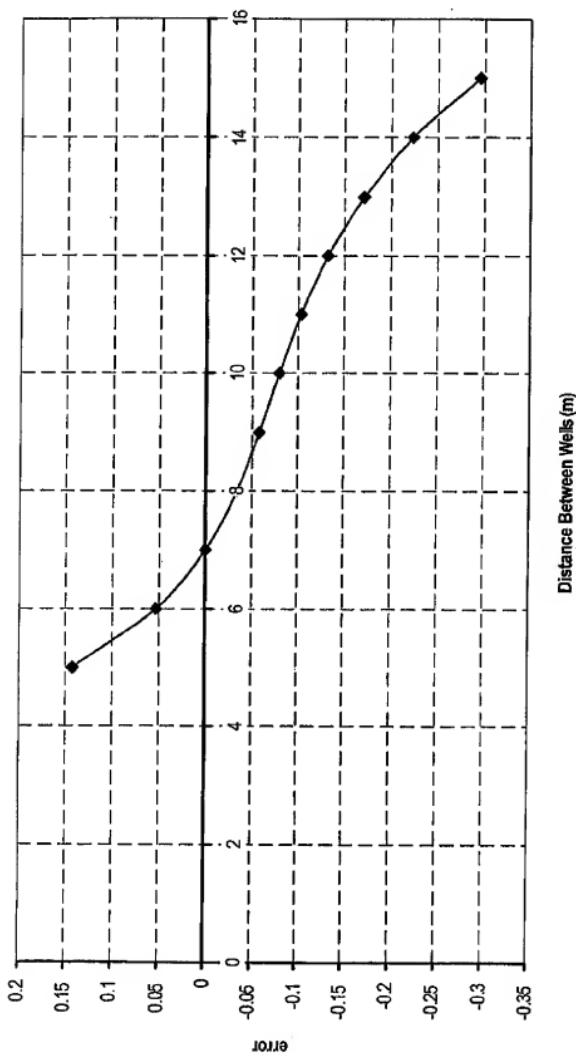


FIG. 40

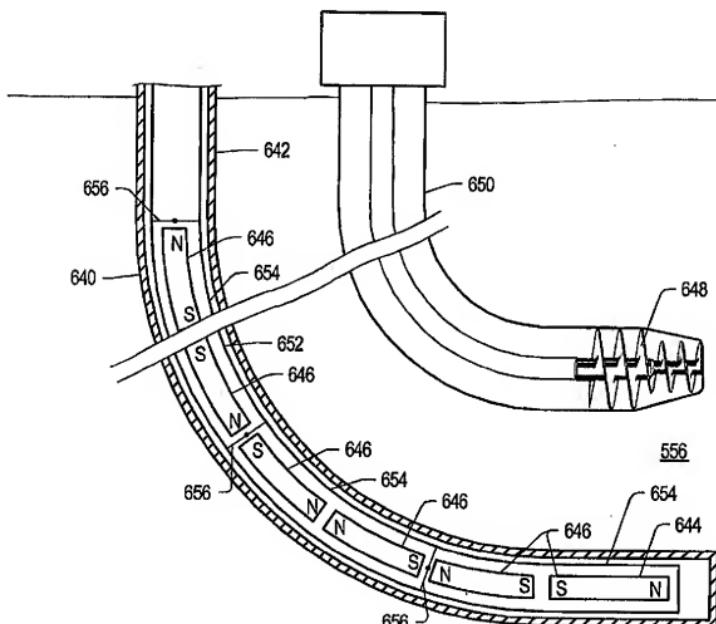


FIG. 41

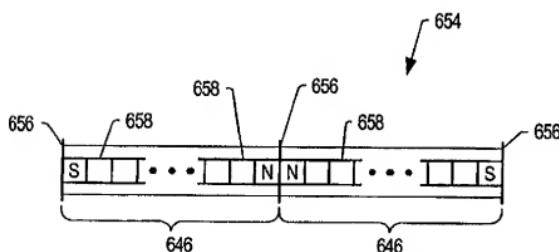


FIG. 42

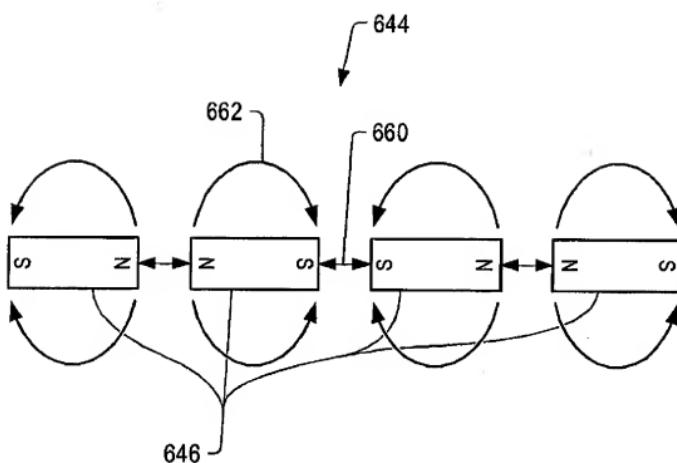


FIG. 43

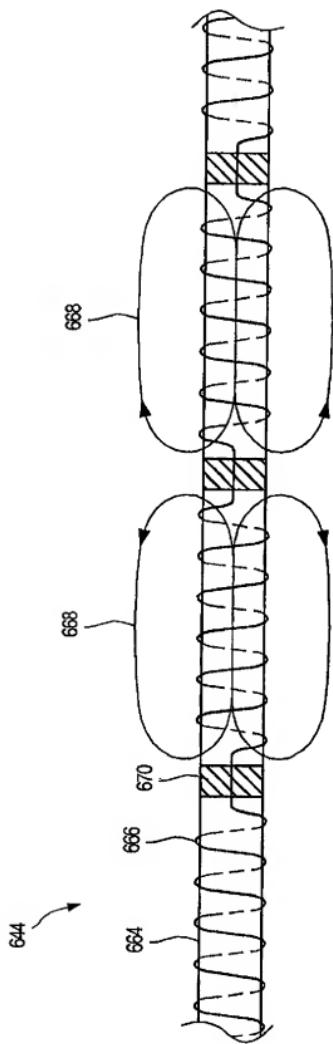


FIG. 44

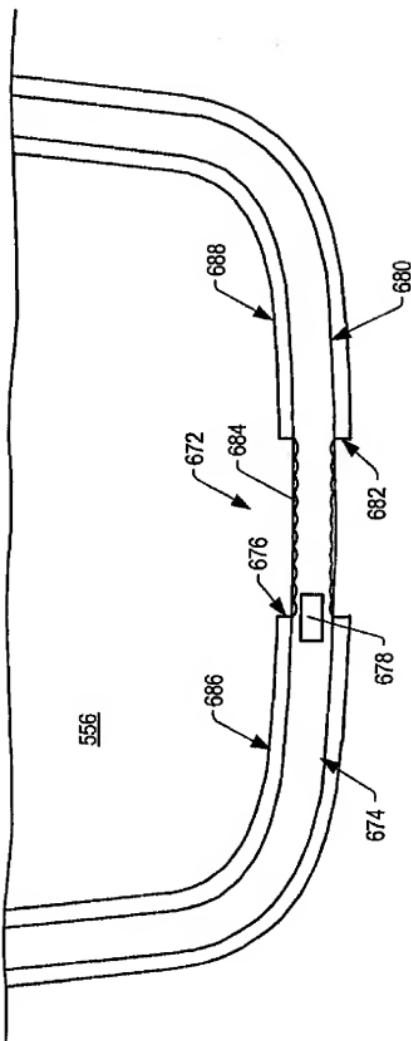
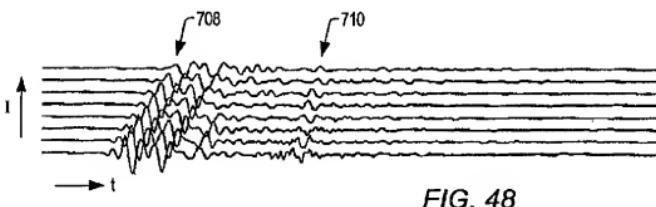
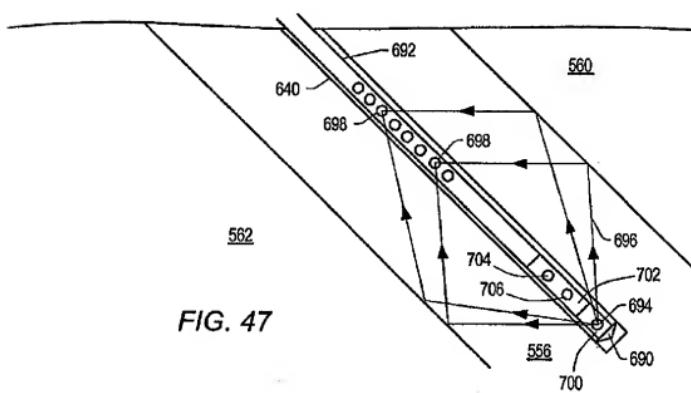
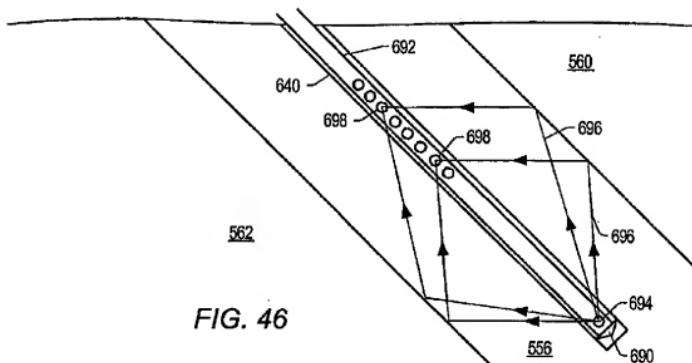


FIG. 45



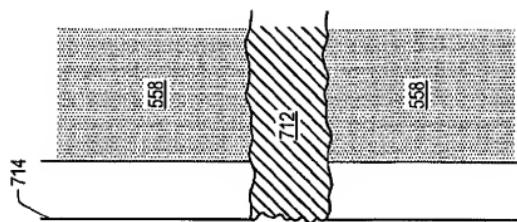


FIG. 50

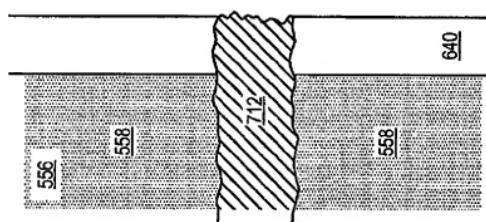
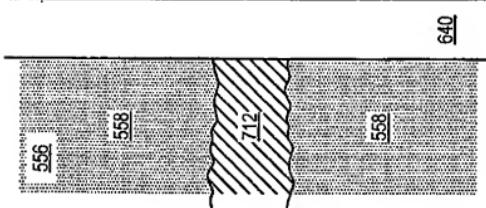
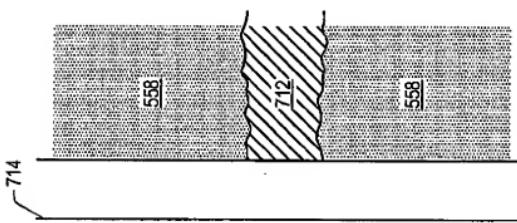
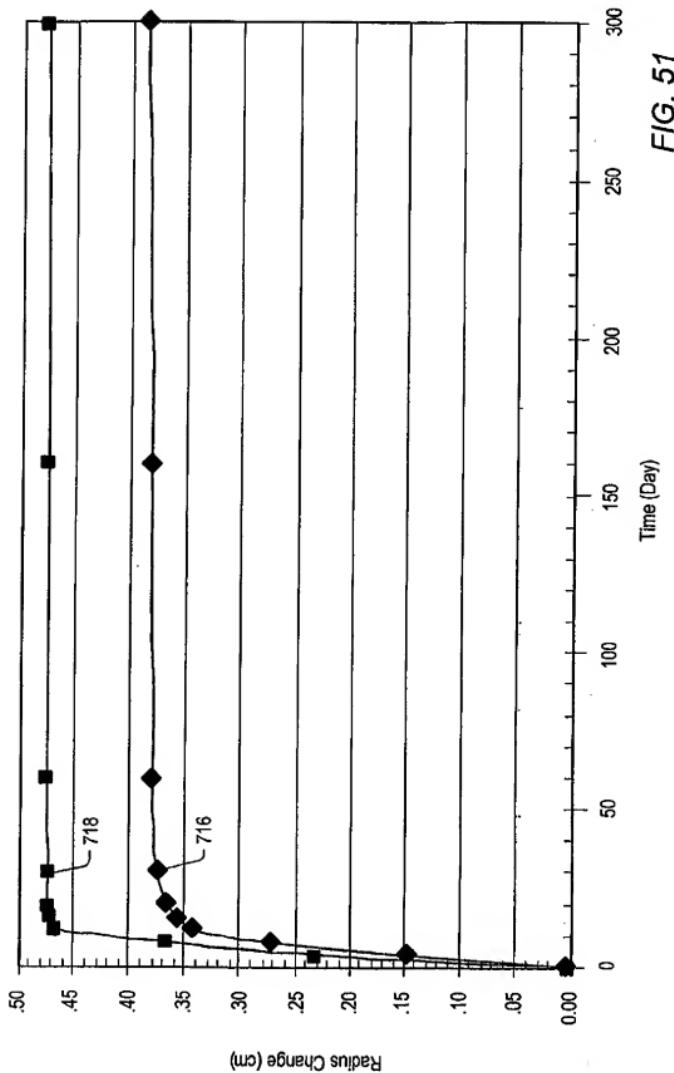


FIG. 49





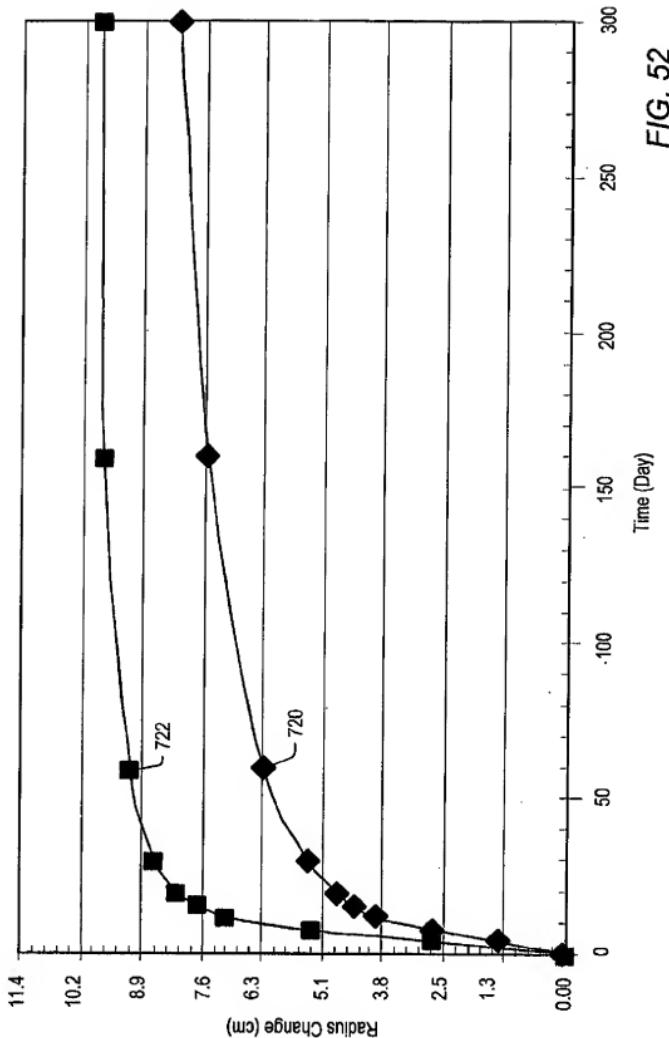


FIG. 52

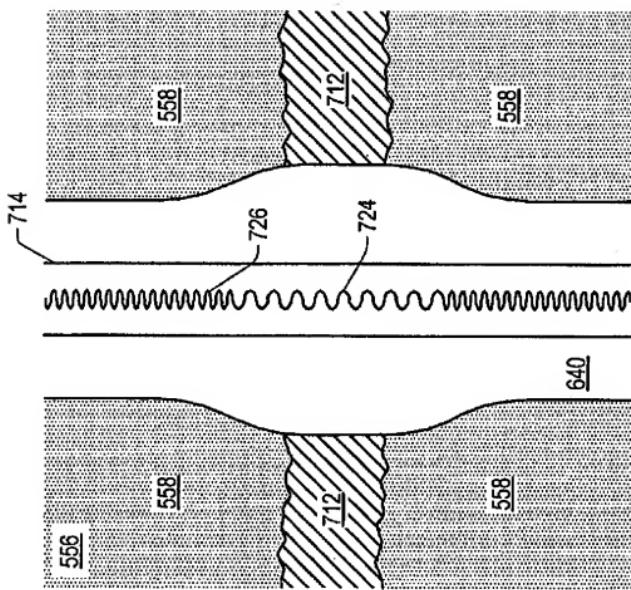


FIG. 53

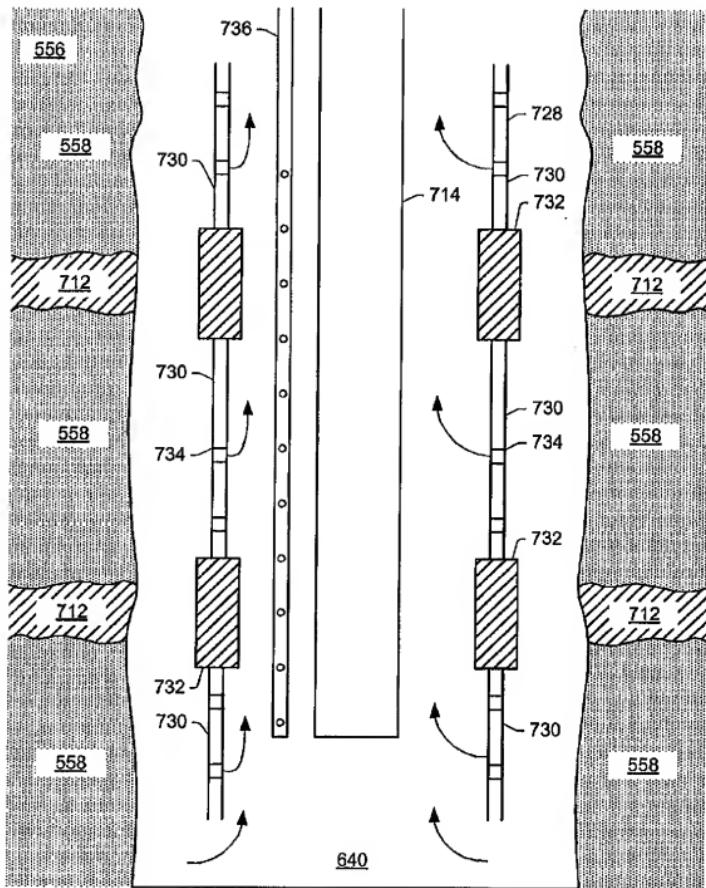


FIG. 54